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## PATENT ABSTRACTS OF JAPAN

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(57) Abstract:

**PURPOSE:** To sharpen the temperature gradient between a hot and cold contacts by a method wherein black sections are suspended in a hole in an Si substrate, thermocouples are built, and then a temperature compensating resistance film is formed at a corner of the Si substrate.

**CONSTITUTION:** An insulating film 11 is formed on a rectangular substrate 10, blocking a hole 10a provided in a rectangular Si substrate 10. Black sections 12 are formed in a hole region S on the insulating film 11. Each one of thermocouples 13 connected with each other in series is provided with a hot contact 13c built inside the hole region S near a black section 12 and with a cold contact point 13d built outside the hole region S on the insulating film 11. A temperature compensating resistance film 15 is made of one of the linear thin film materials constituting the thermocouple 13 and is positioned on the insulating film 11 at a corner of the substrate 10 on the side of a cold contact 13d. In this design, with the black section 12 and hot contact 13c efficiently conserving heat, the thermal capacity of the insulating film 10 in contact therewith may be quite small, which sharpens the temperature

gradient between the hot contact 13c and cold contact 13d.

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